

1 --19. A method for routing a medical image comprising:
generating at least one medical image at an image-acquiring site;
creating a computerized study which includes the at least one medical image and
identifying information about the study;
transmitting the study over a wide area network to an image interpretation site, the
transmission being controlled by an administrative processor coupled to the image acquiring site,
the administrative processor generating study parameters from the study, and selecting the
interpretation site using the study parameters and data available to the administrative processor
relating to a plurality of interpretation sites located on the wide area network; and
receiving the study at the interpretation site over the wide area network.

2 20. The method of claim 19, further comprising:
generating a report at the interpretation site; and
routing the report to the image-acquiring site.

3 21. The method of claim 19, wherein the administrative processor selects an interpretation
site by comparing the study parameters with the data, the data comprising information on the
availability of interpretation sites located on the wide area network.

4 22. The method of claim 19, wherein the administrative processor is located at the image
acquiring site.

5 23. The method of claim 19 wherein the at least one medical image comprises an image
selected from a group comprising: radiological images, computer tomography images, ultrasound
images, and magnetic resonance images.

6 24. A method for routing medical images to obtain an interpretation of the medical images,
comprising:
at a medical site located on a wide area network, using a data processing system for:

performing medical imaging on a patient to obtain a plurality of medical images;
generating identifying information about a patient;

obtaining information relating to a plurality of image interpretation sites located on the wide area network;

performing a comparison between the identifying information and the information relating to the plurality of image interpretation sites;

selecting an image interpretation site;

routing of the medical images to at least one of the image interpretation sites over the wide area network; and

at an interpretation site, using a computerized workstation for:

receiving the medical images over the wide area network;

displaying the medical images;

generating a report relating to the medical images; and

transmitting the report to a predetermined site.

7 25. The method of claim ~~24~~⁶, wherein the medical site comprises an image-acquiring site.

8 26. The method of claim ~~24~~⁶, wherein the identifying information includes patient information selected from the group comprising: age, sex, or other demographic information, suspected pathology, modality, anatomy, and location of the site where the medical image acquisition was performed.

9 27. The method of claim ~~24~~⁶, the step of performing a comparison further comprising determining medical study parameters from the identifying information and comparing the medical study parameters with the information relating to the plurality of image interpretation sites.

10 28. The method of claim ~~27~~⁹ wherein the step of determining medical study parameters includes the step of determining demographic information about the patient.

11 29. The method of claim ~~27~~⁹ wherein the step of determining medical study parameters includes the step of determining information about an anatomy of the patient.

~~12~~
~~30.~~ The method of claim ~~27~~⁹ wherein the step of determining medical study parameters includes the step of determining whether the medical imaging was performed with the use of a diagnostic imaging method selected from the group comprising: computer assisted tomography, x-ray imaging, magnetic resonance imaging, nuclear medicine, ultrasound imaging, and computed radiography.

~~13~~
~~31.~~ The method of claim ~~27~~⁹ wherein the information relating to each of a plurality of interpretation sites includes at least one parameter selected from the group comprising: the availability of medical providers, the types of specialists, their hours of coverage, existing backlog at the interpretation site.

~~14~~
~~32.~~ The method of claim ~~24~~⁶, further comprising utilizing the medical site for monitoring the selected interpretation site for timeliness and for requests for additional patient information.

~~15~~
~~33.~~ The method of claim ~~24~~⁶ wherein the medical site monitors the time during which the interpretation site is generating an interpretation of the medical images, and if the time monitored is greater than a predetermined time allotted for interpretation, the medical images are transmitted to a different interpretation site.

~~16~~
~~34.~~ The method of claim ~~24~~⁶, further comprising routing the identifying information to the at least one image interpretation site.

~~17~~
~~35.~~ A system for routing medical images, comprising:
at least one image-acquiring site comprising:
an acquisition device for obtaining medical images;
a first data processing system for creating a study comprising patient information and the medical images;
a second data processing system coupled to the first data processing system including a memory module storing data relating to type of medical personnel at one or more interpretation sites and availability of the one or more interpretation sites, the second data processing system determining medical parameters from the study, selecting

an interpretation site based on the medical parameters and the data, and generating control signals;

a transmitter having an input coupled to the second data processing system and an output coupled to a wide area network for transmitting the study and the control signals to the selected interpretation site over the wide area network; and
a plurality of interpretation sites in communication with the acquiring site via the wide area network, each interpretation site comprising:

a receiver for receiving the study and the control signals;

an image viewing system for viewing the study;

a third data processing system for generating an interpretation of the study; and

a transmitter having an input coupled to the third data processing system, and an

output for routing the interpretation.

¹⁸
~~36.~~ ¹⁷ The system of claim ~~35~~, wherein the medical images comprise images selected from the group comprising: radiological images, computer tomography images, ultrasound images, and magnetic resonance images.

¹⁹
~~37.~~ A method for routing medical images comprising:

a) providing a first digital processing system for generating a study comprising one or more medical images and identifying information about a patient;

b) providing a second digital processing system in communication with the first digital processing system for: (i) obtaining information relating to a plurality of image interpretation sites which are coupled to the wide area network, (ii) performing a comparison between the identifying information and the information relating to the image interpretation sites, and (iii) selecting an image interpretation site based on the comparison;

c) coupling the first digital processing system to a wide area network for transmitting the study over a wide area network to a selected image interpretation site; and

~~d) providing a third digital processing system at the image interpretation site for:~~

(i) receiving a study over the wide area network, (ii) displaying the study on an image viewing

system, (iii) generating a report relating to the study, and (iv) transmitting the report to a medical site.

²⁰ 38. The method of claim ¹⁹ 37 wherein the first digital processing system is located at an acquiring site, the second digital processing system is located at an administrative site, and the acquiring site and the administrative site are coupled via a network.

²¹ 39. The method of claim ²⁰ 38, wherein the network is a local area network.

²² 40. The method of claim ¹⁹ 37, wherein the medical site is an image-acquiring site.

²³ 41. The method of claim ¹⁹ 37 further comprising prompting a user at the first digital processing system to enter identifying information selected from the group comprising: age, sex, other demographic information, suspected pathology, modality, anatomy, and the location of the acquiring site where the medical image acquisition was performed.

²⁴ 42. The method of claim ¹⁹ 37, wherein the information relating to the plurality of interpretation sites comprises information about the availability of medical providers, hours of coverage, and existing backlog at the site.

²⁵ 43. A system for routing medical images and obtaining an interpretation of the medical images, comprising:

an image-acquiring site comprising: (i) acquisition equipment for obtaining medical images, (ii) a host computer for creating a study comprising patient information and the medical images, and (iii) networking equipment for transmitting the study over a wide area network;

an administrative site coupled to the image acquiring site comprising a data processing system for: (i) determining medical parameters from the study, (ii) selecting an interpretation site based on a comparison between the medical parameters and data relating to a plurality of image interpretation sites, and (iii) initiating transmission of the study over the wide area network from the image-acquiring site to the selected interpretation site; and

at least one interpretation site distanced from the image-acquiring site and the administrative site and coupled to a wide area network, comprising: (i) image viewing equipment